

Industry Reliability QFD

Q1 recirc. 1 - Needs

March 31, 2010

AVSI Project AFE 74

Boeing

Honeywell

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- **Chart the future of reliability research**
- **Integrate the wisdom and experience of a large number of industry reliability experts**
- **Focus the discussions around the common goal to improve electronics reliability assessment practices**
- **Critically analyze findings, and organize analysis process using the Quality Function Deployment (QFD)**
- **Develop a reliability roadmap with broad**

Within the scope of AFE 74's charter to investigate electronic and electromechanical failure rate modeling

AFE 74 - Integrated Reliability

AFE 74 (2010 Project) will build on framework and roadmap developed under AFE 70 (2008-2009 Project):

- Quality Function Deployment (QFD) will be conducted with broad participation from multiple branches of the DoD, subject matter experts and industry stakeholders, to build a reliability roadmap.**
- This project will develop additional capabilities and a prediction module (Module A) for the reliability prediction framework developed in project AFE 70.**
- This new reliability module (Module A) will be provided to the Naval Surface Warfare Center (NSWC) Crane to be added to a future update to**

Definitions for this project (AFE 74)

- **Reliability -**

- The ability of an item to perform a required function under stated conditions for a stated period of time

- **Reliability Modeling -**

- A mathematical model or models used to evaluate the products' reliability at various stages of its life cycle
- Based on known conditions of use, the stated period of time, information on the design of the item, physics of failure, models of failure mechanisms and fatigue factors
- Includes Reliability Predictions (forecasts of reliability)

- **Reliability Assessment -**

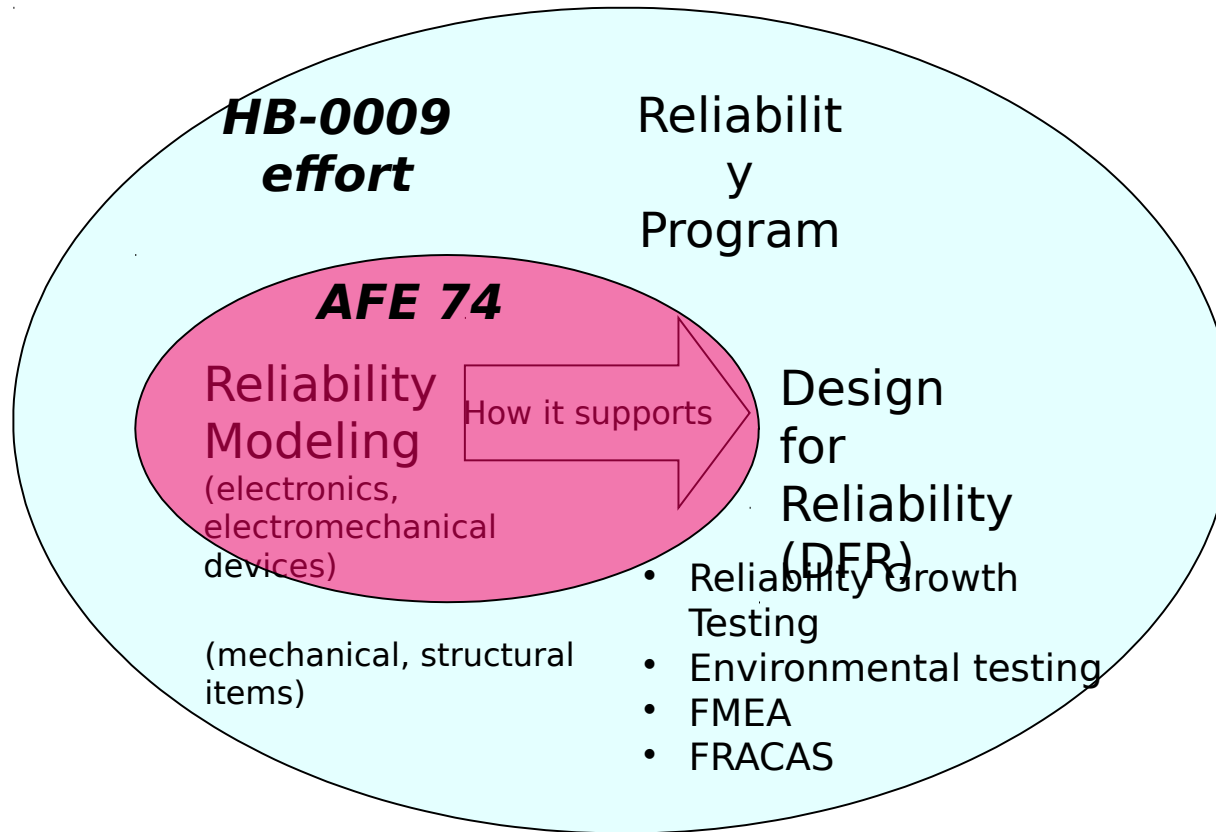
- Includes Reliability Modeling, but may also include other reliability assurance activities such as HALT, FRACAS, closed loop field failure analysis, etc., that are not necessarily quantitative but also qualitative

- **Design for Reliability (DFR) -**

- A process for improving an item's reliability
- DFR uses information available from reliability predictions, failure modes effects analyses (FMEAs), reliability growth testing, environmental testing, data from designed experiments, field data, and closed-loop failure reporting and corrective action system (FRACAS) to systematically eliminate sources of failure

Scope of this study and other efforts

AFE-74



Reliability modeling provides information for the DFR process, but is not the only activity in the reliability program

THANK YOU

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